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TECHNOMICS INC OAKTON VA

A SYSTEM APPROACH TO NAVY MEDICAL EDUCATION AND TRAINING. APPFN--ETC(U)

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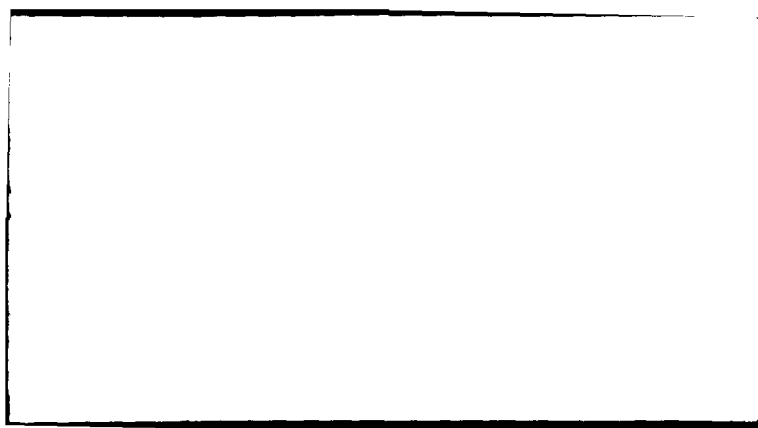
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APPENDIX 18.  
RADIATION TECHNICIAN .

6 ██████████ A SYSTEM APPROACH  
to ██████████ NAVY MEDICAL ██████████  
EDUCATION AND TRAINING. ██████████  
FINAL REPORT

9 Final rept.

11 31 Aug 74

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15 N00014-69-C-0246

Prepared under Contract to  
OFFICE OF NAVAL RESEARCH  
U.S. DEPARTMENT OF THE NAVY

Quida C. Upchurch, Capt., NC, USN  
Program Manager  
Education and Training R&D  
Bureau of Medicine and Surgery (Code 71G)

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| REPORT DOCUMENTATION PAGE  |   | READ INSTRUCTIONS<br>BEFORE COMPLETING FORM |
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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>The study objective consisted of a determination of what the health care personnel in the Navy's Medical Department, Bureau of Medicine and Surgery actually do in their occupations; improving the personnel process (education and training); and building a viable career pathway for all health care personnel. Clearly the first task was to develop a system of job analyses applicable to all system wide health care manpower tasks. A means of postulating simplified occupational clusters covering some 50 |   |   |

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currently designated Navy enlisted occupations, 20 Naval Enlisted Classification Codes (NEC's) were computerized. A set of 16 groupings that cover all designated occupations was developed so as to enhance the effectiveness of professionals and sub-professionals alike.

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## FOREWORD

The project, "Application of a System Approach to the Navy Medical Department Education and Training Programs," was initiated in May of 1969 as a realistic, comprehensive response to certain objectives set forth in ADO 43-03X, and to memoranda from both the Secretary of Defense and the Assistant Secretary of Defense, Manpower and Reserve Affairs. The Secretary's concern was stated in his memorandum of 29 June 1965, "Innovation in Defense Training and Education." More specific concerns were stated in the Assistant Secretary's memorandum of 14 June 1968, "Application of a System Approach in the Development and Management of Training Courses." In this he called for "vigorous and imaginative effort," and an approach "characterized by an organized training program with precise goals and defined operational interrelation among instructional system components." He also noted, "Job analyses with task descriptions expressed in behavioristic terms are basic and essential to the development of precise training goals and learning objectives."

### The Project

System survey and analysis was conducted relative to all factors affecting education and training programs. Subsequently, a job-analysis sub-system was defined and developed incorporating a series of task inventories "...expressed in behavioristic terms..." These inventories enabled the gathering of job activity data from enlisted job incumbents, and data relating to task sharing and delegation from officers of the Medical, Nurse and Dental Corps. A data management sub-system was devised to process incumbent data, then carry out needed analyses. The development of initial competency curricula based upon job analysis was implemented to a level of methodology determination. These methods and curriculum materials constituted a third (instructional) sub-system.

Thus, as originally proposed, a system capability has been developed in fulfillment of expressed need. The system, however, remains untested and unevaluated. ADO 43-03X called for feasibility tests and cost-effectiveness determination. The project was designed to so comply. Test and evaluation through the process of implementation has not proved feasible in the Navy Medical Department within the duration of the project. As designed and developed the system does have "...precise goals and defined operational interrelation among instructional system components." The latter has been achieved in terms of a recommended career structure affording productive, rewarding manpower utilization which bridges manpower training and health care delivery functions.

### Data Management Sub-System

Job analysis, involving the application of comprehensive task inventories to thousands of job incumbents, generates many millions of discrete bits of response data. They can be processed and manipulated only by high speed computer capability using rigorously designed specialty programs. In addition to numerical data base handling, there is the problem of rapidly and accurately manipulating a task statement data base exceeding ten thousand carefully phrased behavioral statements. Through the use of special programs, task inventories are prepared, printouts for special purposes are created following a job analysis application, access and retrieval of both data and tasks are efficiently and accurately carried out, and special data analyses conducted. The collective programs, techniques and procedures comprising this sub-system are referred to as the Navy Occupational Data Analysis Language (NODAL).

### Job Analysis Sub-System

Some twenty task inventory booklets (and associated response booklets) were the instruments used to obtain job incumbent response data for more than fifty occupations. An inventory booklet contains instructions, formatted questions concerning respondent information ("bio-data"), response dimension definitions, and a list of tasks which may vary in number from a few hundred to more than a thousand per occupational field.

By applying NODAL and its associated indexing techniques, it is possible to assemble modified or completely different inventories than those used in this research. Present inventories were applied about three years ago. While they have been rendered in operational format, they should not be re-applied until their task content is updated.

Response booklets were designed in OPSCAN mode for ease of recording and processing responses.

Overall job analysis objectives and a plan of administration were established prior to inventory preparation, including the setting of provisional sample target sizes. Since overall data attrition was forecast to approximate twenty percent, final sample and sub-sample sizes were adjusted accordingly. Stratified random sampling techniques were used. Variables selected (such as rating, NEC, environment) determined stratifications, together with sub-population sizes. About fifteen percent of large sub-populations were sought while a majority or all members of small sub-populations were sought.

Administration procedures were established with great care for every step of the data collecting process, and were coordinated with sampling and data analysis plans. Once set, the procedures were formalized as a protocol and followed rigorously.

### Instructional Sub-System

Partial "competency curricula" have been composed as an integral sub-system bridging what is required as performance on the job with what is, accordingly, necessary instruction in the training process. Further, curriculum materials were developed to meet essential requirements for implementing the system so that the system could be tested and evaluated for cost effectiveness. However, due to the fact that test and evaluation was not feasible in the Navy Medical Department within the duration of the project, it was not possible to complete the development of the system through the test and evaluation phase. The inability to complete this phase also interrupted the planned process for fully developing the curricula; therefore, instead of completed curricula ready for use in the system, the curricula were partially developed to establish the necessary sub-system methodology. The competency curricula are based on tasks currently performed by job incumbents in 1971. (The currency of a given curriculum depends upon periodic analysis of incumbents' jobs, and its quality control resides in the evaluation of the performance competency of the program's graduates.)

A competency curriculum provides a planned course of instruction or training program made up of sequenced competency units which are, in turn, comprised of sequenced modules. These modules, emphasizing performance objectives, are the foundation of the curriculum.

A complete module would be comprised of seven parts: a cluster of related tasks; a performance objective; a list of knowledges and skills implied by the objective; a list of instructional strategies for presenting the knowledges and skills to the learner; an inventory of training aids for supporting the instructional strategies; a list of examination modes; and a statement of the required training time. In this project, curriculum materials have been developed to various levels of adequacy, and usually comprise only the first three parts; the latter four need to be prepared by the user.

The performance objective, which is the most crucial part of the module, is the basis for determining curriculum content. It is composed of five essential elements: the stimulus which initiates the behavior; the behavior; the conditions under which the behavior takes place; the criteria for evaluating the behavior; and the consequence or results of the behavior. A sixth element, namely next action, is not essential; however, it is intended to provide linkage for the next behavior.

Knowledges and skills listed in the module are those needed by the learner for meeting the requirements of the performance objective.

Instructional strategies, training aids, examination modes and training time have been specified only for the Basic Hospital Corps Curriculum. The strategies, aids and modes were selected on the basis of those considered to be most supportive in presenting the knowledges and skills so as to provide optimum learning effectiveness and training efficiency. The strategies extend from the classroom lecture as traditionally presented by a teacher to the more sophisticated mediated program for self-instruction. The training aids, like strategies, extend from the traditional references and handout material in the form of a student syllabus to mediated programs for self-instruction supported by anatomical models. Examination modes extend from the traditional paper and pencil tests to proficiency evaluation of program graduates on the job, commonly known as feedback. Feedback is essential for determining learning effectiveness and for quality control of a training program. The kind of instructional strategies, training aids and examination modes utilized for training are limited only by such factors as staff capability and training budget.

The training time specified in the Basic Hospital Corps Curriculum is estimated, based upon essential knowledge and skills and program sequence.

The competency curriculum module, when complete, provides all of the requirements for training a learner to perform the tasks set forth in the module. A module may be used independently or related modules may be re-sequenced into modified competency units to provide training for a specific job segment.

Since the curricula are based upon tasks performed by job incumbents in 1971, current analysis of jobs needs to be accomplished using task inventories that have been updated to reflect changes in performed tasks. Subsequent to job analysis, a revision of the curricula should be accomplished to reflect task changes. When the foregoing are accomplished, then faculty and other staff members may be indoctrinated to the competency curricula and to their relationship to the education and training system.

In addition to the primary use for the systematic training of job incumbents, these curricula may be used to plan for new training programs, develop new curricula, and revise existing curricula; develop or modify performance standards; develop or modify proficiency examinations; define billets; credentialize training programs; counsel on careers; select students; and identify and select faculty.

## The System

Three sub-systems, as described, comprise the proposed system for Education and Training Programs in The Navy Medical Department. This exploratory and advanced developmental research has established an overall methodology for improved education and training incorporating every possible means of providing bases for demonstrating feasibility and cost effectiveness. There remains only job analysis sub-system updating, instructional sub-system completion, and full system test and evaluation.

## Acknowledgements

The authors wish to acknowledge the invaluable participation of the several thousands of Naval personnel who served as respondents in inventory application. The many military and civilian personnel who contributed to developmental efforts are cited by name in the Final Report.

The authors also wish to acknowledge former colleagues for singularly important contributions, namely, Elias H. Porter, Ph.D., Carole K. Kauffman, R.N., M.P.H., Mary Kay Munday, B.S.N., R.N., Gail Zarren, M.S.W., and Renee Schick, B.A.

Identity and acknowledgement of the project Advisory Group during the project's final year is recorded in the Final Report.

Lastly, the project could not have been commenced nor carried out without the vision, guidance and outstanding direction of Ouida C. Upchurch, Capt., NC, USN, Project Manager.

NAVY MEDICAL DEPARTMENT

TASK INVENTORY BOOKLET

RADIATION

## CONSTRAINTS AND ETHICAL USE

This task inventory was developed three years ago in a first-version key punch format for education and training research purposes.

The present "operational" format, using a mark-sense response booklet (Opscan), is recommended for future applications. The task and equipment statements comprising the bulk of the inventory are precisely the same (less duplicate entries) as in the original research tools but rearranged for Opscan mode. Biographical data questions have also been reformatted for Opscan (NEC codes should be updated).

The processing, administering and formatting of this inventory have thus been readied for operational application.

It is strongly recommended that this inventory be updated in its task and equipment statement sections before actual operational use. These reasons pertain:

- Changes in medical or related procedures or techniques
- Some tasks may violate current policy or be obsolete
- Equipment changes may have occurred
- The objective of task comprehensiveness may change
- Objectives may shift to embrace manpower utilization as well as education and training

In the latter regard, the present operational format includes a "time to perform" dimension (as well as frequency of performance and two additional optional blank response dimension fields). As a response dimension, "time to perform" has been validated within the context of inventories for professional personnel where the objectives embraced utilization (i.e., time associated with shared and delegable tasks). The original Enlisted inventory content was directed to education and training factors only. If "time to perform" is to be used operationally, each task and equipment statement should be examined by expert job incumbents to remove possible overlaps which could confound "time to perform" data. This review process would also serve other purposes cited above.

A general precaution is in order.

When task analysis inventories are poorly prepared, loosely administered, administered according to less than rigorous sampling, or are handled casually in processing or interpretation, they will inevitably produce poor or questionable data, at best. At worst, such practices will result in loss of money and time, and produce dangerous data. Inventories should be prepared, applied, processed and interpreted only by knowledgeable professional and technical personnel. As in the cases of ethically controlled behavior tests, inventories should not be casually copied or distributed, and should remain under the control of authorized, trained personnel. Factors effecting reliability and validity should be fully appreciated.

## GENERAL INSTRUCTIONS

There are two parts to be completed for this survey:

- Part I            Career Background Information  
                  (answers to be recorded in this  
                  TASK BOOKLET)
  
- Part II A        List of Tasks (answers to be  
                  recorded on the accompanying  
                  RESPONSE BOOKLET)
  
- B    List of Instruments and  
                      Equipment (answers to be  
                      recorded on the accompanying  
                      RESPONSE BOOKLET)

Each part is preceded by a set of instructions. Be sure to read them carefully before you start answering each part. All instructions are found on the tinted pages.

PLEASE USE ONLY NUMBER 2 LEAD PENCILS. ERASE ALL CHANGES CAREFULLY AND COMPLETELY. DO NOT PUT ANY MARKS OTHER THAN YOUR ANSWERS ON EACH RESPONSE PAGE.

DO NOT FOLD, WRINKLE, CREASE OR DETACH PAGES FROM EITHER TASK BOOKLET OR RESPONSE BOOKLET.

WHEN RECORDING YOUR ANSWERS YOU MAY WANT TO USE A RULER TO READ ACROSS ANSWER AND QUESTION COLUMNS.

WHEN YOU HAVE COMPLETED YOUR RESPONSES, PUT THE TASK INVENTORY BOOKLET AND THE RESPONSE BOOKLET IN THE ENCLOSED SELF-ADDRESSED ENVELOPE. SEAL AND RETURN TO THE OFFICER WHO GAVE YOU THIS PACKAGE. COMPLETED BOOKLETS SHOULD BE RETURNED WITHIN ONE WEEK OF RECEIPT.

Part I

CAREER BACKGROUND INFORMATION

Check that the Form and Serial Number in this box match those on the cover of this Booklet

Please fill out completely

Name of your Duty Station \_\_\_\_\_

City & State (if applicable) \_\_\_\_\_

Your Name \_\_\_\_\_

Social Security Number \_\_\_\_\_

DO NOT FILL IN

\_\_\_\_ (1)

N \_\_\_\_\_ (7)

Form Serial No.

PLEASE ANSWER QUESTIONS BELOW BY ENTERING THE PROPER NUMBER IN THE BLANKS PROVIDED. TWO BLANKS REQUIRE A TWO-DIGIT ANSWER. DISREGARD NUMBERS IN PARENTHESIS.

ENTER ANSWERS HERE

Q1. Select the number to indicate the Corps to which you belong:

1. Dental Technician
2. Hospital Corps

Q1.\_\_\_\_ (23)

Q2. Indicate your military status:

1. USN
2. USNR

Q2.\_\_\_\_ (24)

Q3. Indicate your pay grade:

1. E1
2. E2
3. E3
4. E4
5. E5
6. E6
7. E7
8. E8
9. E9

Q3.\_\_\_\_ (25)

Q4. Indicate your total years of active duty in the Navy to date: (estimate to the nearest year)

1. Less than 2 years
2. 2 to 4 years
3. 5 to 8 years
4. More than 8 years

Q4.\_\_\_\_ (26)

|     |  | ENTER<br>ANSWERS<br>HERE |      |
|-----|--|--------------------------|------|
| Q5. | Select the number to indicate your present immediate supervisor:   | Q5. __                   | (27) |
|     | 1. Physician   |                          |      |
|     | 2. Dentist   |                          |      |
|     | 3. Nurse   |                          |      |
|     | 4. MSC Officer   |                          |      |
|     | 5. HM or DT  |                          |      |
|     | 6. Other (Specify) _____   |                          |      |
| Q6. | Select the number to indicate the average number of hours you work per week: (estimate to the nearest hour)  | Q6. __                   | (28) |
|     | 1. 35 to 40 hours  |                          |      |
|     | 2. 41 to 50 hours  |                          |      |
|     | 3. More than 50 hours  |                          |      |
| Q7. | Please give an estimate of the percent of time you spend on the following (write five percent as <u>05</u> ):  | Q7.                      |      |
|     | 1. Inpatient care  | 1. __ __%                | (29) |
|     | 2. Outpatient care   | 2. __ __%                | (31) |
|     | 3. Teaching  | 3. __ __%                | (33) |
|     | 4. Administration  | 4. __ __%                | (35) |
|     | 5. Other (specify) _____   | 5. __ __%                | (37) |
| Q8. | Assuming that most or all of the following factors are of importance to you, select the three which, if improved, would contribute <u>most</u> to your job satisfaction: | Q8. __ __                | (39) |
|     | 01 Salary and/or promotion opportunities   |                          |      |
|     | 02 Retirement benefits   |                          |      |
|     | 03 Housing   |                          |      |
|     | 04 Educational advancement opportunities   |                          |      |
|     | 05 Stability of tour of duty   |                          |      |
|     | 06 Physical facilities and equipment   |                          |      |
|     | 07 Administrative and clerical support   |                          |      |
|     | 08 Work load   |                          |      |
|     | 09 Personal career planning  |                          |      |
|     | 10 Opportunity to attend professional meetings   |                          |      |
|     |  |                          | (41) |
|     |  |                          | (43) |

- |  | ENTER<br>ANSWERS<br>HERE |      |
|--|--------------------------|------|
| Q9. Using the list on page <u>vii</u> specify your current NEC by writing the <u>last two digits</u> of the CODE.  | Q9. __ __                | (45) |
| Q10. Select the number to indicate your years of experience corresponding to the NEC stated in Q9: (estimate to the nearest year)  | Q10. __ __               | (47) |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">           1. Less than 1 year<br/>           2. 1 to 2 years<br/>           3. 3 to 5 years         </div> <div style="width: 45%;">           4. 6 to 10 years<br/>           5. 11 to 15 years<br/>           6. More than 15 years         </div> </div> |                          |      |
| Q11. If you have other NEC(s) in addition to the one specified in Q9, check page <u>vii</u> and indicate the last two digits of the CODE(s). If you have none, enter "99" in answer space for <u>Q11</u> and <u>Q12</u> .  | Q11a. __ __              | (48) |
|  | b. __ __                 | (50) |
| Q12. Select the number to indicate the years of experience you had in the NEC(s) stated in Q11 (estimate to the nearest year).   | Q12a. __ __              | (52) |
|  | b. __ __                 | (53) |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">           1. Less than 1 year<br/>           2. 1 to 2 years<br/>           3. 3 to 5 years         </div> <div style="width: 45%;">           4. 6 to 10 years<br/>           5. 11 to 15 years<br/>           6. More than 15 years         </div> </div> |                          |      |
| Q13. From the list below, write the <u>two-digit</u> CODE to indicate the specialty of the department in which you are <u>currently</u> functioning.   | Q13. __ __               | (54) |

CODE

- |                          |                    |
|--------------------------|--------------------|
| 01 Administration        | 18 Urology         |
| 02 Education             | 19 Intensive Care  |
| 03 Anesthesiology        | 20 Operating Room  |
| 04 Coronary Care         | 21 Emergency Room  |
| 05 Dermatology           | 00 Other (specify) |
| 06 Medicine - OPD        |                    |
| 07 Medicine - Wards      |                    |
| 08 Obstetrics/Gynecology |                    |
| 09 Ophthalmology         |                    |
| 10 Orthopedics           |                    |
| 11 Otolaryngology        |                    |
| 12 Medical Laboratory    |                    |
| 13 Pediatrics            |                    |
| 14 Psychiatry            |                    |
| 15 Public Health         |                    |
| 16 Radiology             |                    |
| 17 General Surgery-Wards |                    |

ENTER  
ANSWER  
HERE

Q14. Select the number to indicate the type of duty station at which you currently work, and have been working for at least 30 days:

Q14. \_

(56)

1. Hospital
2. Dispensary
3. Aboard ship/sub, no M.O. (or D.O.) aboard
4. Aboard ship/sub, M.O. (or D.O.) aboard
5. Aviation squadron/wing, Navy or Marine
6. Marine ground forces
7. Administrative Commands
8. Research Commands or PMUs
9. Dental Clinic
0. Other \_\_\_\_\_

Q15. Indicate the number of people you normally supervise:

Q15. \_

(57)

- |         |            |
|---------|------------|
| 0. None | 3. 6-10    |
| 1. 1-2  | 4. 11-20   |
| 2. 3-5  | 5. over 20 |

MEDICAL/DENTAL NEC (NAVAL ENLISTED CODE) AND TITLE

0000 General Service, Hospital or Dental Corpsman  
3371 Health Physics & Process Control Technician  
3391 Nuclear Power Plant Operator  
8402 Nuclear Submarine Medicine Technician  
8403 Submarine Medicine Technician  
8404 Medical Field Service Technician  
8405 Advanced Hospital Corps Technician (Class B)  
8406 Aviation Medicine Technician  
8407 Nuclear Medicine Technician  
8408 Cardiopulmonary Technician  
8409 Aviation Physiology Technician  
8412 Clinical Laboratory Assistant Technician  
8413 Tissue Culture Technician  
8414 Clinical Chemistry Technician  
8415 Medical Technology Technician  
8416 Radioactive Isotope Technician  
8417 Clinical Laboratory Technician  
8432 Preventive Medicine Technician  
8433 Tissue Culture and Tissue Bank Technician  
8442 Medical Administrative Technician  
8452 X-ray Technician  
8453 Electrocardiograph/Basal Metabolism Technician  
8454 Electroencephalograph Technician  
8462 Optician (General) Technician  
8463 Optician Technician  
8466 Physical and Occupational Technician  
8472 Medical Photography Technician  
8482 Pharmacy Technician  
8483 Operating Room Technician  
8484 Eye, Ear, Nose, & Throat Technician  
8485 Neuropsychiatry Technician  
8486 Urological Technician  
8487 Occupational Therapy Technician  
8488 Orthopedic Appliance Mechanic  
8489 Orthopedic Cast Room Technician  
8492 Special Operations Technician  
8493 Medical Deep Sea Diving Technician  
8494 Physical Therapy Technician  
8495 Dermatology Technician  
8496 Embalming Technician  
8497 Medical Illustration Technician  
8498 Medical Equipment Repair Technician  
8703 DT General, Advanced  
8707 DT Field Service  
8713 DT Clinical Laboratory  
8714 DT Research Assistant  
8722 DT Administrative  
8732 DT Repair  
8752 DT Prosthetic, Basic  
8753 DT Prosthetic, Advanced  
8765 DT Maxillofacial Prosthetic

## RESPONSE BOOKLET INSTRUCTIONS

- To complete Part II, you need this TASK BOOKLET and the accompanying RESPONSE BOOKLET. Record all your answers to Part II in the RESPONSE BOOKLET.
- All pages of the RESPONSE BOOKLET are machine readable. In order for responses to be properly read, please be sure to:
  1. Use a No. 2 pencil only
  2. Carefully and completely shade the number corresponding to your answer under each column.
- Complete Page 00 of the RESPONSE BOOKLET first. Follow instructions given on the page. Fill in Line 1, and Boxes 2, 3, 4, and 5. Ignore all other boxes. BE SURE TO ENTER YOUR SOCIAL SECURITY NUMBER (WRITE DOWNWARD) IN THE BLANK SPACES IN BOX 3: then darkly shade the corresponding number on each line. An example of a completed Page 00 is shown on the next page (the hand-written notes in this example are for clarification only. Please do not make similar notes on your RESPONSE BOOKLET.)
- After completing Page 00, carefully read and follow instructions given on pages x through xiv.
- PLEASE HANDLE YOUR RESPONSE BOOKLET CAREFULLY. KEEP IT CLEAN AND AWAY FROM CHEMICALS. DO NOT DETACH, FOLD, WRINKLE OR CROSS OUT ANY PAGE.

|                            |   |                     |                     |                     |
|----------------------------|---|---------------------|---------------------|---------------------|
| DO NOT MARK IN THESE BOXES | 0 1 2 3 4 5 6 7 8 9                               | 0 1 2 3 4 5 6 7 8 9 | 0 1 2 3 4 5 6 7 8 9 | 0 1 2 3 4 5 6 7 8 9 |
|                            | 0 1 2 3 4 5 6 7 8 9                               | 0 1 2 3 4 5 6 7 8 9 | 0 1 2 3 4 5 6 7 8 9 | 0 1 2 3 4 5 6 7 8 9 |
|                            | <b>RESPONSE BOOKLET</b><br>Serial No. <b>0233</b> |                     |                     |                     |

My name is

1 NAME

Mary Smith

Ignore these boxes

INSTRUCTIONS

1. Use No. 2 pencil ONLY.
2. Indicate responses with solid black mark in space provided.
3. Erase COMPLETELY all changes.
4. Do not detach forms from packet.
5. Answer questions 2 through 5 below.
6. See Task Statement Booklet for further instructions for completing boxes to the right.

Today is June 4, 1972  
 June = 06  
 1972 = 72

|   |              |       |                     |
|---|--------------|-------|---------------------|
| 2 | TODAY'S DATE | MONTH | 0 1 2 3 4 5 6 7 8 9 |
|   |              | DAY   | 0 1 2 3 4 5 6 7 8 9 |
|   |              | YEAR  | 0 1 2 3 4 5 6 7 8 9 |

My Soc. Sec. No. is 304-26-9751

|   |                        |   |                     |
|---|------------------------|---|---------------------|
| 3 | SOCIAL SECURITY NUMBER | 3 | 0 1 2 3 4 5 6 7 8 9 |
|   |                        | 0 | 0 1 2 3 4 5 6 7 8 9 |
|   |                        | 4 | 0 1 2 3 4 5 6 7 8 9 |
|   |                        | 2 | 0 1 2 3 4 5 6 7 8 9 |
|   |                        | 6 | 0 1 2 3 4 5 6 7 8 9 |
|   |                        | 9 | 0 1 2 3 4 5 6 7 8 9 |

SEE COVER OF YOUR TASK BOOKLET Form N20, Ser. No. 0233

|   |              |            |                     |
|---|--------------|------------|---------------------|
| 4 | TASK BOOKLET | FORM       | 0 1 2 3 4 5 6 7 8 9 |
|   |              | SERIAL NO. | 0 1 2 3 4 5 6 7 8 9 |
|   |              |            | 0 1 2 3 4 5 6 7 8 9 |
|   |              |            | 0 1 2 3 4 5 6 7 8 9 |

My Birthday is May 10, 1940  
 May = 05 1940 = 40

|   |               |       |                     |
|---|---------------|-------|---------------------|
| 5 | DATE OF BIRTH | MONTH | 0 1 2 3 4 5 6 7 8 9 |
|   |               | DAY   | 0 1 2 3 4 5 6 7 8 9 |
|   |               | YEAR  | 0 1 2 3 4 5 6 7 8 9 |

TASK ANALYSIS BACKGROUND DATA SHEET

|   |                     |                     |        |
|---|---------------------|---------------------|--------|
| SEE TASK STATEMENT BOOKLET FOR INSTRUCTIONS TO COMPLETE BOXES | 6                   | 0 1 2 3 4 5 6 7 8 9 | 13 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 14 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 15 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 16 0 1 |
|   | 7                   | 0 1 2 3 4 5 6 7 8 9 | 17 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 18 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 19 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 20 0 1 |
|   | 8                   | 0 1 2 3 4 5 6 7 8 9 | 21 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 22 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 23 0 1 |
|   |                     | 0 1 2 3 4 5 6 7 8 9 | 24 0 1 |
| 9   | 0 1 2 3 4 5 6 7 8 9 | 25 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 26 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 27 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 28 0 1              |        |
| 10  | 0 1 2 3 4 5 6 7 8 9 | 29 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 30 0 1              |        |
| 11  | 0 1 2 3 4 5 6 7 8 9 | 31 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 32 0 1              |        |
| 12  | 0 1 2 3 4 5 6 7 8 9 | 33 0 1              |        |
|   | 0 1 2 3 4 5 6 7 8 9 | 34 0 1              |        |

Ignore these boxes

## PART II

### PART II A LIST OF TASKS

### PART II B LIST OF INSTRUMENTS AND EQUIPMENT

#### HOW TO RESPOND TO TASK STATEMENTS AND INSTRUMENTS

Your responses to each statement should be marked on the corresponding page, column and item number in your RESPONSE BOOKLET.

Note that each page in your RESPONSE BOOKLET has two response blocks. The left-hand block (items 1-25) is for entering responses to statements printed on LEFT pages of this TASK BOOKLET; the right-hand block (items 26-50) is for the responses to statements printed on RIGHT pages. Make sure that your answers are recorded in the appropriate block on every page. DO NOT MAKE ANY MARKS OTHER THAN YOUR ANSWERS!

Each time you start a new page in your RESPONSE BOOKLET, check the page on your TASK BOOKLET. See that the numbers match; then mark the page number in "Box X" in the response page (see instructions at the top of response page.) This is necessary for computer processing.

Tear the Response Guide (p. xiii) at the perforation, and use the correct side to respond to each task or instrument found on the following white pages. Note the following detailed explanation of responses.

Column A - (the responses to Column A differ for Part II A and Part II B, be sure to use the appropriate set of responses.)

Part II A

How often did you do this task within the last month?  
(If you were on leave, consider your immediate past working month.)

- 0 = Did not do
- 1 = Did less than 5 times
- 2 = Did 5 to 20 times
- 3 = Did 21 to 50 times
- 4 = Did 51 to 100 times
- 5 = Did more than 100 times

Part II B

How often did you use this instrument or piece of equipment within the last month? (If you were on leave, consider your immediate past working month.)

- 0 = Did not use
- 1 = Used less than 5 times
- 2 = Used 5-20 times
- 3 = Used 21-50 times
- 4 = Used 51-100 times
- 5 = Used more than 100 times

If answer in Column A is 0, go to the next statement. If answer is 1, 2, 3, 4 or 5, answer also Columns B, C & D.

Column B

Indicate the approximate time you spent on a single performance the last time you performed this task.

0 = less than one minute

1 = 1 to 4 minutes

2 = 5 to 10 minutes

3 = 11 to 20 minutes

4 = 21 to 30 minutes

5 = 31 to 60 minutes

6 = 1 to 2 hours

7 = more than 2 hours

Column C

Do you feel you need additional training to perform this task?

0 = No

1 = Yes

# RESPONSE GUIDE

(DO NOT LOSE THIS TAB)

## HOW TO RESPOND TO PART IIA - LIST OF TASKS

ANSWER COL. A FIRST. IF A = 0, GO TO NEXT STATEMENT: IF A = 1-5, ANSWER COLUMNS B, C & D ALSO.

X-111

| A                         | B   | C   | D  |
|---------------------------|---|---|--|
| FREQUENCY                 | TIME CONSUMED<br>(single performance<br>the last time<br>performed) | DO YOU FEEL YOU<br>NEED ADDITIONAL<br>TRAINING TO PER-<br>FORM THIS TASK? | OPTION<br>(Additional instructions<br>will be given if this<br>column is used) |
| 0=DID NOT DO LAST MONTH   | 0=LESS THAN 1 MINUTE  | 0=NO  |  |
| 1=DID LESS THAN 5 TIMES   | 1=1 TO 4 MINUTES  | 1=YES   |  |
| 2=DID 5 TO 20 TIMES       | 2=5 TO 10 MINUTES   |   |  |
| 3=DID 21 TO 50 TIMES      | 3=11 TO 20 MINUTES  |   |  |
| 4=DID 51 TO 100 TIMES     | 4=21 TO 30 MINUTES  |   |  |
| 5=DID MORE THAN 100 TIMES | 5=31 TO 60 MINUTES  |   |  |
|                           | 6=1 TO 2 HOURS  |   |  |
|                           | 7=MORE THAN 2 HOURS   |   |  |

# RESPONSE GUIDE

(DO NOT LOSE THIS TAB)

## HOW TO RESPOND TO PART IIB - LIST OF INSTRUMENTS AND EQUIPMENT

ANSWER COL. A FIRST. IF A = 0, GO TO NEXT STATEMENT: IF A = 1-5, ANSWER COLUMNS B, C & D ALSO.

| A                          | B                                 | C   | D  |
|----------------------------|-----------------------------------|---|--|
| FREQUENCY                  | TIME CONSUMED<br>(last time used) | DO YOU FEEL YOU<br>NEED ADDITIONAL<br>TRAINING TO PER-<br>FORM THIS TASK? | OPTION<br>(Additional instructions<br>will be given if this<br>column is used) |
| 0=DID NOT USE LAST MONTH   | 0=LESS THAN 1 MINUTE              | 0=NO  |  |
| 1=USED LESS THAN 5 TIMES   | 1=1 TO 4 MINUTES                  | 1=YES   |  |
| 2=USED 5 TO 20 TIMES       | 2=5 TO 10 MINUTES                 |   |  |
| 3=USED 21 TO 50 TIMES      | 3=11 TO 20 MINUTES                |   |  |
| 4=USED 51 TO 100 TIMES     | 4=21 TO 30 MINUTES                |   |  |
| 5=USED MORE THAN 100 TIMES | 5=31 TO 60 MINUTES                |   |  |
|                            | 6=1 TO 2 HOURS                    |   |  |
|                            | 7=MORE THAN 2 HOURS               |   |  |

Part II A  
LIST OF TASKS

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 01 OF RESPONSE BOOKLET |
|----------|---|
|----------|---|

- |    |  |
|----|--|
| 1  | TAKE ROUTINE ABDOMINAL X-RAYS                        |
| 2  | TAKE ROUTINE CERVICAL SPINE X-RAYS                   |
| 3  | TAKE ROUTINE CHEST X-RAYS                            |
| 4  | TAKE ROUTINE FACIAL X-RAYS                           |
| 5  | TAKE ROUTINE LUMBAR SPINE X-RAYS                     |
| 6  | TAKE ROUTINE MASTOID X-RAYS                          |
| 7  | TAKE ROUTINE SINUS X-RAYS                            |
| 8  | TAKE ROUTINE SKULL X-RAYS                            |
| 9  | TAKE ROUTINE THORACIC SPINE X-RAYS                   |
| 10 | TAKE ROUTINE X-RAYS OF LOWER EXTREMITIES             |
| 11 | TAKE ROUTINE X-RAYS OF UPPER EXTREMITIES             |
| 12 | TAKE ROUTINE X-RAYS OF KIDNEY/URETER/BLADDER         |
| 13 | TAKE ROUTINE X-RAYS OF MANDIBLE                      |
| 14 | TAKE ROUTINE X-RAYS OF RIBS AND STERNUM              |
| 15 | TAKE ROUTINE X-RAYS OF SACRUM AND COCCYX             |
| 16 | TAKE ROUTINE X-RAYS OF TEMPOROMANDIBULAR JOINTS      |
| 17 | TAKE LONG BONE X-RAY SERIES                          |
| 18 | TAKE X-RAYS FOR BONE AGE RADIOGRAPHS                 |
| 19 | TAKE X-RAYS FOR METASTATIC SURVEYS                   |
| 20 | TAKE FOREIGN BODY LOCALIZATION X-RAYS OF EXTREMITIES |
| 21 | TAKE FOREIGN BODY LOCALIZATION X-RAYS OF SKULL       |
| 22 | TAKE FOREIGN BODY LOCALIZATION X-RAYS OF THORAX      |
| 23 | TAKE PHOTOFLUROGRAMS                                 |
| 24 | TAKE FOREIGN BODY LOCALIZATION X-RAYS OF EYE         |
| 25 | TAKE X-RAYS OF SMALL INTESTINE                       |

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 01<br>OF RESPONSE BOOKLET |
|----------|---|
| 26       | TAKE X-RAYS FOR CONTRAST STUDIES OF LARGE BOWEL OR COLON                            |
| 27       | TAKE X-RAYS FOR UPPER GI SERIES   |
| 28       | TAKE INTRAVENOUS CHOLANGIOGRAMS   |
| 29       | TAKE X-RAYS FOR CHOLECYSTOGRAPHIC STUDIES   |
| 30       | TAKE ARTHROGRAMS  |
| 31       | TAKE BRONCHOGRAMS   |
| 32       | TAKE MAMMOGRAMS   |
| 33       | TAKE SIALOGRAMS   |
| 34       | TAKE ABDOMINAL ARTERIOGRAMS   |
| 35       | TAKE CEREBRAL ANGIOGRAMS  |
| 36       | TAKE INFERIOR VENACAVAGRAMS   |
| 37       | TAKE VENTRICULOGrams  |
| 38       | TAKE PNEUMOENCEPHALOGrams   |
| 39       | TAKE MYELOGrams   |
| 40       | TAKE PNEUMOCARDIOGRAMS  |
| 41       | TAKE ANGIOCARDIOGRAMS   |
| 42       | TAKE FEMORAL ARTERIOGRAMS   |
| 43       | TAKE LYMPHANGIOGRAMS  |
| 44       | TAKE PHLEBOGRAMS  |
| 45       | TAKE RENAL ARTERIOGRAMS   |
| 46       | TAKE RETROGRADE CYSTOGRAM   |
| 47       | TAKE RETROGRADE PYELOGRAM   |
| 48       | TAKE URETHROGRAMS   |
| 49       | TAKE CYSTOGRAMS   |
| 50       | TAKE INTRAVENOUS PYELOGrams   |

TURN PAGE

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 02<br>OF RESPONSE BOOKLET |
|----------|--|
| 1        | TAKE HYPERTENSIVE INTRAVENOUS PYELOGRAMS   |
| 2        | TAKE RENAL LOOPOGRAM   |
| 3        | TAKE CIXU, I.E. CONSTANT INFUSION  |
| 4        | DO RENAL SPLIT FUNCTION TEST, E.G. STAMEY  |
| 5        | TAKE PNEUMOCYSTOGRAMS  |
| 6        | TAKE FETOGRAMS   |
| 7        | TAKE HYSTEROSALPINGIOGRAMS   |
| 8        | TAKE PLACENTOGRAMS   |
| 9        | TAKE X-RAYS FOR PELVIMETRIC STUDIES  |
| 10       | TAKE BITE-WING X-RAYS  |
| 11       | TAKE OCCLUSAL X-RAYS   |
| 12       | DETERMINE EXPOSURE TECHNIQUE FOR X-RAY SERIES                                      |
| 13       | DETERMINE AND SET KILOVOLTAGE-MAJOR/MINOR-PEAK METER ON X-RAY<br>UNIT              |
| 14       | DETERMINE AND SET MA METER ON X-RAY UNIT   |
| 15       | DETERMINE AND SET IMPULSE TIMER ON X-RAY UNIT                                      |
| 16       | SELECT ALTERNATIVE TECHNIQUES IN SETTING X-RAY UNIT                                |
| 17       | WRITE EXPOSURE TECHNIQUE CHART FOR X-RAY   |
| 18       | REPEAT SHOOTING OF X-RAY UNTIL X-RAY IS READABLE                                   |
| 19       | TAKE X-RAYS WITH A CEPHALIC TUBE TILT  |
| 20       | TAKE X-RAYS WITH A CAUDAL TUBE TILT  |
| 21       | TAKE X-RAYS USING SCREEN TECHNIQUE   |
| 22       | TAKE X-RAYS USING FIXED GRID TECHNIQUE   |
| 23       | TAKE X-RAYS USING CARDBOARD TECHNIQUE  |
| 24       | TAKE X-RAYS USING BUCKY TECHNIQUE  |
| 25       | TAKE TOMOGRAMS, LAMINOGRAMS, PLANOGRAMS  |

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 02  
OF RESPONSE BOOKLET

- |    |  |
|----|--|
| 26 | TAKE STEREOSCOPIC X-RAYS   |
| 27 | TAKE LATERAL DECUBITUS X-RAY OF CHEST  |
| 28 | TAKE LATERAL DECUBITUS X-RAY OF ABDOMEN  |
| 29 | PERFORM DEEP ROENTGEN THERAPY  |
| 30 | PERFORM SUPERFICIAL ROENTGEN THERAPY   |
| 31 | TAKE PORTAL FILM OF AREA BEING TREATED WITH COBALT                                     |
| 32 | INFORM DOCTOR OF UNEXPECTED X-RAY FINDINGS   |
| 33 | READ X-RAY FILMS FOR TECHNICAL ADEQUACY  |
| 34 | POINT OUT POSSIBLE ABNORMALITIES ON X-RAY FILM TO DOCTOR                               |
| 35 | DETECT LUNG ABNORMALITIES ON X-RAY FILM  |
| 36 | DETECT BONE ABNORMALITIES ON X-RAY FILM  |
| 37 | DETECT TISSUE ABNORMALITIES ON X-RAY FILM  |
| 38 | CHECK FOR/REPORT PRESENCE OF FETUS OR STONES ON KUB X-RAY                              |
| 39 | DEVELOP MEDICAL X-RAY FILMS  |
| 40 | DEVELOP INDUSTRIAL X-RAY FILMS   |
| 41 | REVIEW/INSPECT X-RAY FILMS FOR DISPOSAL  |
| 42 | TEST CASSETTES FOR SCREEN FILM CONTACT   |
| 43 | TEST CASSETTES FOR SCREEN LAG  |
| 44 | PREPARE FILM PROCESSING CHEMICALS  |
| 45 | INSPECT X-RAY FILM QUALITY TO EVALUATE DEVELOPMENT TECHNIQUES                          |
| 46 | INSPECT CONDITION OF FILM STORAGE AREAS, I.E. FOR PROPER<br>TEMPERATURE/LIGHT/HUMIDITY |
| 47 | STORE UNEXPOSED FILMS  |
| 48 | SUPERVISE DARKROOM PROCEDURES  |
| 49 | RETRIEVE SILVER FROM X-RAYS  |
| 50 | CHECK X-RAY DARK ROOM FOR LIGHT LEAKS  |

TURN PAGE

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 03  
OF RESPONSE BOOKLET

- 1 INSPECT PHOTODOSIMETRY FILM PRIOR TO ISSUE
- 2 PREPARE PHOTODOSIMETRY FILM FOR SUBMISSION TO PROCESSING  
ACTIVITY
- 3 PROCESS BETA, GAMMA AND/OR NEUTRON FILMS
- 4 DO PHOTODOSIMETRIC CHECK FILM PROCESS
- 5 EVALUATE BETA, GAMMA FILMS
- 6 REVIEW DEFENSIVE MEASURES AGAINST NBC EFFECTS
- 7 COMPARE FILM BADGE AND POCKET DOSIMETER READINGS
- 8 INVESTIGATE CASES OF LOST AND DAMAGED PERSONNEL MONITORING  
DEVICES
- 9 INVESTIGATE FILM BADGE AND POCKET DOSIMETER READING  
DISCREPANCIES
- 10 INVESTIGATE PHOTODOSIMETRIC CHECK FILM PROCESSING DISCREPANCIES
- 11 INVESTIGATE CASES OR REPORTS OF OVEREXPOSURES TO RADIATION
- 12 REVIEW RADIATION EXPOSURE REPORTS
- 13 ANALYZE RADIATION DATA TO MAKE PREDICTIONS OF PERSONNEL EXPOSURE
- 14 RECOMMEND PROCEDURE CHANGES TO IMPROVE RADIATION SAFETY
- 15 RECOMMEND ARRANGEMENT OF EQUIPMENT FOR MAXIMUM RADIATION SAFETY
- 16 SPECIFY PERSONNEL RADIATION PROTECTION EQUIPMENT
- 17 CHECK SAFETY OF RADIATION PROTECTIVE CLOTHING
- 18 INFORM WARD PERSONNEL OF PRECAUTIONS IN HANDLING PATIENT ON RI  
THERAPY
- 19 ADVISE PERSONNEL/PATIENT ON ROUTINE RADIATION SAFETY PRECAUTIONS
- 20 REQUEST SPECIFIC LAB TEST/PHYSICALS FOR PERSONNEL EXPOSED TO  
IONIZING RADIATION
- 21 POST FILM BADGES TO SURVEY RADIATION IN X-RAY OR RADAR AREAS
- 22 TEST FOR EXTENT OF RADIATION EMISSION FROM INDUSTRIAL X-RAYS
- 23 INSTALL ENVIRONMENTAL RADIATION MONITORING DEVICES
- 24 MONITOR PATIENT CLOTHING, LINEN, AND WASTES FOR RADIOACTIVE  
CONTAMINATION FOLLOWING RI THERAPY
- 25 MONITOR RADIATION LEVELS IN FOOD AND WATER

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 03  
OF RESPONSE BOOKLET

- |    |   |
|----|---|
| 26 | MONITOR ATMOSPHERE FOR SCATTERED RADIATION                                      |
| 27 | INSPECT WARD FACILITIES FOR PROTECTION AGAINST RADIATION HAZARD                 |
| 28 | MONITOR THE PATIENT AREA AND ESTABLISH THE 2 MR LINE                            |
| 29 | SURVEY/DECONTAMINATE ROOM OCCUPIED BY RI THERAPY PATIENT                        |
| 30 | MONITOR RI THERAPY AREA FOR POSSIBLE RESIDUAL RADIOACTIVITY                     |
| 31 | DETERMINE RADIATION LEVEL OF CADAVERS PRIOR TO AUTOPSY                          |
| 32 | PERFORM SAFETY INSPECTIONS OF AREAS WHERE RADIOACTIVE MATERIALS ARE USED        |
| 33 | PERFORM SAFETY INSPECTIONS OF AREAS WHERE RADIATION PRODUCING EQUIPMENT IS USED |
| 34 | INSPECT NEW LABORATORIES WHERE USE OF RADIOACTIVE MATERIALS IS PROPOSED         |
| 35 | PERFORM SWIPE SURVEYS FOR RADIOACTIVE CONTAMINATION                             |
| 36 | DO RADIATION AREA SURVEYS USING PORTABLE MONITORING DEVICES                     |
| 37 | DO RADIATION SURVEY IN RP STORAGE AREA  |
| 38 | MONITOR ATMOSPHERE FOR CONTAMINATION WITH RADIOACTIVE GASES                     |
| 39 | MONITOR ATMOSPHERE FOR CONTAMINATION WITH RADIOACTIVE PARTICULATES              |
| 40 | CALCULATE RADIOACTIVE DECAY   |
| 41 | CALCULATE RADIOACTIVE CONTAMINATION LEVELS FROM SWIPE SURVEYS                   |
| 42 | PERFORM LEAK TEST OF SEALED RADIOACTIVE SOURCES                                 |
| 43 | CALCULATE ACTIVITIES DETECTED FROM LEAKING SEALED SOURCES                       |
| 44 | CALCULATE ACTIVITIES OF RADIOACTIVE SOURCES                                     |
| 45 | CALCULATE DOSE RATE FROM RADIOACTIVE SOURCES                                    |
| 46 | CALCULATE STAY TIMES FOR RADIATION AREAS  |
| 47 | CALCULATE SHIELDING REQUIREMENTS FOR RADIOACTIVE SOURCES                        |
| 48 | DO SHIELDING OF RADIOACTIVE MATERIAL  |
| 49 | DISPOSE OF CONTAMINATED MATERIALS PER AEC REQUIREMENTS                          |
| 50 | DISPOSE OF EXPIRED RP MATERIALS PER AEC REQUIREMENTS                            |

TURN PAGE

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 04 OF RESPONSE BOOKLET           |
|----------|---|
| 1        | SUPERVISE DISPOSAL OF RADIOACTIVE WASTE   |
| 2        | PERFORM RADIOACTIVE DECONTAMINATION OF EQUIPMENT/SPACES                                   |
| 3        | DECONTAMINATE PERSONNEL SUBJECTED TO ABNORMAL INTERNAL RADIATION EXPOSURE                 |
| 4        | DECONTAMINATE PERSONNEL SUBJECTED TO ABNORMAL EXTERNAL RADIATION EXPOSURE                 |
| 5        | PERFORM SIMULATED RADIOACTIVE DECONTAMINATION OF PERSONNEL                                |
| 6        | SUPERVISE HANDLING OF CONTAMINATED CASUALTIES FROM NUCLEAR ACCIDENTS/SPILLS               |
| 7        | SUPERVISE HANDLING OF CONTAMINATED CASUALTIES FROM SIMULATED NUCLEAR ACCIDENTS/SPILLS     |
| 8        | SUPERVISE DECONTAMINATION OF GROSSLY CONTAMINATED PERSONNEL FROM NUCLEAR ACCIDENTS/SPILLS |
| 9        | SUPERVISE DECONTAMINATION OF PERSONNEL FROM SIMULATED NUCLEAR ACCIDENTS/SPILLS            |
| 10       | PREPARE FOR AEC INSPECTION  |
| 11       | REVIEW DEFENSIVE MEASURES AGAINST NBC EFFECTS   |
| 12       | PLAN MEDICAL DEPARTMENT RESPONSE IN EVENT OF NUCLEAR ACCIDENT                             |
| 13       | COORDINATE RADIOLOGICAL ACTIVITIES WITH PUBLIC INFORMATION OFFICE                         |
| 14       | ADVISE COMMAND ON MAXIMUM RADIATION EXPOSURES INDIVIDUALS MAY RECEIVE                     |
| 15       | RECEIVE RADIOPHARMACEUTICAL   |
| 16       | INSPECT RADIOPHARMACEUTICAL   |
| 17       | DISTRIBUTE RADIOPHARMACEUTICAL TO CLINIC SECTIONS   |
| 18       | SHIP RADIOPHARMACEUTICAL  |
| 19       | RECORD RECEIPT AND ISSUE OF RADIOPHARMACEUTICAL   |
| 20       | MAINTAIN SAFE STORAGE AREA FOR RADIOPHARMACEUTICAL  |
| 21       | STORE RADIOPHARMACEUTICAL   |
| 22       | CALCULATE RADIOPHARMACEUTICAL DOSE  |
| 23       | CALCULATE RADIOPHARMACEUTICAL DOSE USING SURFACE AREA - BODY WEIGHT FORMULA               |
| 24       | ASSAY INCOMING RADIOPHARMACEUTICAL  |
| 25       | ASSAY 99M-TC BY DILUTION METHOD   |

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 04<br>OF RESPONSE BOOKLET |
|----------|---|
| 26       | ASSAY 99M-TC BY DOSE CALIBRATOR   |
| 27       | ASSAY 99M-TC BY QUARTZ FIBER ELECTROSCOPE   |
| 28       | ASSAY 99M-TC BY COMMERCIAL COMPANY PROCEDURE  |
| 29       | ASSAY 113M-IN BY COMMERCIAL COMPANY PROCEDURE                                       |
| 30       | ASSAY 131-I THERAPY DOSE  |
| 31       | DETERMINE RADIO-ACTIVE MOLYBDENUM CONTENT OF 99M-TC ELUATE                          |
| 32       | DETERMINE CHEMICAL MOLYBDENUM CONTENT OF 99M-TC ELUATE                              |
| 33       | DETERMINE ALUMINA CONTENT OF 99M-TC ELUATE  |
| 34       | DETERMINE BOUND/UNBOUND RADIOPHARMACEUTICAL BY ILTC/PAPER<br>CHROMATOGRAPHY         |
| 35       | DETERMINE ACTIVITY OF RADIOPHARMACEUTICAL BY ANIMAL ORGAN<br>DISTRIBUTION STUDIES   |
| 36       | DO MICROSCOPIC PARTICLE SIZING OF RADIOPHARMACEUTICAL                               |
| 37       | PREPARE 99M-TC SULFUR COLLOID BY COMMERCIAL METHOD                                  |
| 38       | PREPARE 99M-TC SULFUR COLLOID BY LOCALLY DEVELOPED METHOD                           |
| 39       | PREPARE CHEMICAL SOLUTIONS FOR LOCALLY PREPARED<br>RADIOPHARMACEUTICAL              |
| 40       | PREPARE 99M-TC $Fe(OH)_3$ FOR LUNG SCANNING   |
| 41       | PREPARE 99M-TC ALBUMIN MICRO-SPHERES FOR LUNG SCANNING                              |
| 42       | PREPARE 99M-TC DTPA FOR KIDNEY SCANNING   |
| 43       | PREPARE 99M-TC ALBUMIN FOR CISTERNOGRAPHY   |
| 44       | PREPARE ORAL 18-F FOR BONE SCANNING   |
| 45       | PREPARE INTRAVENOUS 18-F FOR BONE SCANNING  |
| 46       | PREPARE RADIOPHARMACEUTICAL FOR I.V. INJECTION                                      |
| 47       | PREPARE 131-I THERAPY DOSE FOR OUT-PATIENTS   |
| 48       | PREPARE 131-I ORAL THERAPY DOSE FOR IN-PATIENTS                                     |
| 49       | SHIP/TRANSPORT RADIOCHEMICAL COMPOUNDS TO OTHER LABS FOR TESTING                    |
| 50       | DEVELOP NEW RADIOPHARMACEUTICAL   |

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 05  
OF RESPONSE BOOKLET

- 1 COORDINATE WITH INDUSTRY IN THE DEVELOPMENT OF NEW  
RADIOPHARMACEUTICAL
- 2 EVALUATE NEW CLINICAL RADIOPHARMACEUTICAL
- 3 CALCULATE INTERNAL DOSE FOR NEW RADIOPHARMACEUTICAL
- 4 PERFORM 131-I THYROID UPTAKE MEASUREMENT
- 5 PERFORM 99M-TC THYROID UPTAKE MEASUREMENT
- 6 PERFORM 125-I THYROID UPTAKE MEASUREMENT
- 7 PERFORM 131-I THYROID SCAN
- 8 PERFORM 125-I THYROID SCAN
- 9 PERFORM 99M-TC THYROID SCAN
- 10 PERFORM CYTOMEL SUPPRESSION TEST
- 11 PERFORM TSH STIMULATION TEST
- 12 PERFORM PERCHLORATE WASHOUT TEST
- 13 ASSAY 131-I THERAPY DOSE
- 14 PERFORM POST THERAPY THYROID SCAN AND URINARY EXCRETION STUDY
- 15 PERFORM 5:1 RATIO BONE SCAN
- 16 PERFORM FINE DETAIL BONE SCAN
- 17 PERFORM POSITRON BONE SCAN
- 18 PERFORM BONE MARROW SCAN
- 19 PERFORM ROUTINE BRAIN SCAN
- 20 PERFORM BRAIN SCAN WITH VERTEX VIEW
- 21 PERFORM CISTERNOGRAPHY SCAN
- 22 PERFORM CSF LEAKAGE TEST SCAN
- 23 PERFORM CISTERNOGRAPHY USING 99M-TC ALBUMIN
- 24 PERFORM CISTERNOGRAPHY USING 131-I HSA
- 25 PERFORM HEART BLOOD POOL SCAN

GO TO RIGHT HAND PAGE

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 05  
OF RESPONSE BOOKLET

- 26 PERFORM LIVER SCAN USING 198-AU
- 27 PERFORM LIVER SCAN USING 99M-TC SULFUR COLLOID
- 28 PERFORM LUNG SCAN USING 131-I MAA
- 29 PERFORM LUNG SCAN USING 99M-TC FERROUS HYDROXIDE
- 30 PERFORM LUNG SCAN USING 99M-TC MICROSPHERES
- 31 PERFORM LIVER-LUNG SCAN
- 32 PERFORM PAROTID SCAN
- 33 PERFORM KIDNEY SCAN USING 99M-TC DTPA
- 34 PERFORM KIDNEY SCAN USING 197-HG
- 35 PERFORM ISOTOPE RENOGRAM
- 36 PERFORM 99M-TC SULFUR COLLOID SPLEEN SCAN
- 37 PERFORM 51-CR TAGGED RBC, HEAT ALTERED, SPLEEN SCAN
- 38 PERFORM 51-CR TAGGED RBC, CHEMICAL ALTERED, SPLEEN SCAN
- 39 PERFORM PANCREAS SCAN
- 40 PERFORM 99M-TC PLACENTAL SCAN
- 41 PERFORM POLAROID DYNAMIC FLOW STUDIES
- 42 PERFORM 35MM DYNAMIC FLOW STUDIES
- 43 PERFORM 8MM DYNAMIC FLOW STUDIES
- 44 PERFORM INHALATORY LUNG PERFUSION STUDIES
- 45 SET PROPER MARGINS FOR DESIRED AREAS OF SCAN
- 46 NOTE ANATOMICAL LANDMARKS ON PHOTO SCAN
- 47 NOTE ANATOMICAL LANDMARKS ON PAPER SCAN
- 48 DEVELOP SCANS
- 49 EVALUATE SCAN FOR TECHNICAL ADEQUACY
- 50 DETERMINE CRYSTAL RESOLUTION OF SCINTILLATION COUNTERS

TURN PAGE

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 06  
OF RESPONSE BOOKLET

- 1 PREPARE COLLIMATOR ISO-RESPONSE CURVE
- 2 PREPARE RADIOACTIVE COUNTING STANDARDS
- 3 PREPARE LARGE VOLUME RADIOACTIVE COUNTING STANDARDS
- 4 COUNT LARGE SAMPLES IN FRONT OF THE SCINTILLATION COUNTING SYSTEM
- 5 DO T3 TEST USING COMMERCIAL KIT
- 6 DO T3 TEST USING CONVENTIONAL BENCH METHOD
- 7 DO T4 TEST USING COMMERCIAL KIT
- 8 DO T4 TEST USING CONVENTIONAL BENCH METHOD
- 9 DO POST RADIO THERAPY URINE ASSAY
- 10 DO GROWTH HORMONE ASSAY (R.I. TECHNIQUE)
- 11 DO INSULIN IMMUNO ASSAY (R.I. TECHNIQUE)
- 12 DETERMINE  $^{131}\text{I}$  CONVERSION RATIO
- 13 DETERMINE TOTAL BLOOD VOLUME (DUAL TRACER)
- 14 DETERMINE TOTAL BLOOD VOLUME (SINGLE TRACER)
- 15 DETERMINE PLASMA VOLUME USING RISA
- 16 DETERMINE RED CELL VOLUME USING  $^{51}\text{Cr}$
- 17 TAG RED CELLS BY THE UNITAG METHOD
- 18 TAG RED CELLS BY THE SQUIBB METHOD
- 19 TAG RED CELLS BY THE ASCORBIC ACID METHOD
- 20 TAG RED CELLS BY A LOCALLY DEVELOPED METHOD
- 21 READ NORMAL VALUES FOR RED CELL AND PLASMA VOLUME FROM REFERENCE TABLE
- 22 PERFORM RED CELL SURVIVAL AND SEQUESTRATION STUDY (R.I. TECHNIQUE)
- 23 PERFORM VITAMIN B-12 ABSORPTION TEST WITH AND WITHOUT INTRINSIC FACTOR
- 24 PERFORM VITAMIN B-12 R.I. STUDY BY THE PLASMA CONCENTRATION METHOD
- 25 PERFORM VITAMIN B-12 R.I. STUDY BY THE FECAL EXCRETION METHOD

GO TO RIGHT HAND PAGE

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 06<br>OF RESPONSE BOOKLET |
|----------|---|
| 26       | PERFORM ORAL 59-FE ABSORPTION STUDY   |
| 27       | PERFORM IRON KINETICS (I.V.) STUDY  |
| 28       | TAG 59-FE FERROUS CITRATE PLASMA IN VITRO   |
| 29       | PERFORM PANCREATIC FUNCTION AND FAT ABSORPTION STUDIES USING<br>Labeled FATTY ACID  |
| 30       | PERFORM GASTROINTESTINAL PROTEIN LOSS STUDIES                                       |
| 31       | TAG SERUM PROTEINS IN-VITRO   |
| 32       | TAG SERUM PROTEINS IN-VIVO  |
| 33       | PERFORM GASTROINTESTINAL BLOOD LOSS STUDIES   |
| 34       | PERFORM ALBUMIN TURNOVER STUDIES  |
| 35       | PERFORM 51-CR EDTA G.F.R.   |
| 36       | PERFORM 86-RB OR 42-K FLUX STUDIES  |
| 37       | PERFORM TOTAL BODY WATER MEASUREMENT (R.I. TECHNIQUE)                               |
| 38       | CALCULATE ORGAN COUNT RATIOS (R.I. TECHNIQUE )                                      |
| 39       | CALCULATE INDIVIDUAL NORMAL VALUES FOR RED CELL AND PLASMA<br>VOLUMES               |
| 40       | CALCULATE ALBUMIN TURNOVER  |
| 41       | CALCULATE ORAL 59-FE ABSORPTION   |
| 42       | CALCULATE I.V. 59-FE ABSORPTION   |
| 43       | CALCULATE BLOOD VOLUMES FROM VALUES OBTAINED THROUGH<br>RADIOISOTOPE STUDIES        |
| 44       | PERFORM 131-I HSA PLACENTAL LOCALIZATION  |
| 45       | PERFORM 57-COBALT PARATHYROID LOCALIZATION STUDY                                    |
| 46       | PERFORM 22-NA SKIN GRAFT TRANSFER TIME  |
| 47       | RECEIVE PATIENTS ON ARRIVAL, I.E. INTRODUCE SELF, OBTAIN<br>PATIENT'S NAME          |
| 48       | VERIFY IDENTIFICATION OF PATIENT, E.G. FOR TREATMENT,<br>MEDICATIONS, EXAMINATION   |
| 49       | INSTRUCT OR HELP PATIENT/FAMILY FILL OUT FORMS                                      |
| 50       | MEASURE/WEIGH PATIENT OR PERSONNEL  |

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 07<br>OF RESPONSE BOOKLET     |
|----------|--|
| 1        | INFORM PATIENT OF PROCEDURES REQUIRED PRIOR TO/DURING<br>EXAMINATION/TEST/TREATMENT    |
| 2        | EXPLAIN/ANSWER PATIENT'S QUESTIONS REGARDING EXAMINATION/TEST/<br>TREATMENT PROCEDURES |
| 3        | REVIEW WITH PATIENT PRINTED INSTRUCTIONS FOR EXAMINATION/THERAPY<br>PROCEDURES         |
| 4        | ASK/INSTRUCT PATIENT TO COLLECT SPECIMEN   |
| 5        | CHECK WITH PATIENT TO ENSURE THAT HE HAS COLLECTED SPECIMEN AS<br>INSTRUCTED           |
| 6        | EXPLAIN/ANSWER QUESTIONS ABOUT DOCTOR'S INSTRUCTIONS TO PATIENT/<br>FAMILY             |
| 7        | LOAD/UNLOAD PATIENTS FROM STRETCHERS (GURNEY)  |
| 8        | ASSIST PATIENTS IN/OUT OF BED, EXAM OR O.R. TABLES                                     |
| 9        | POSITION/HOLD PATIENT FOR EXAMINATION, TREATMENT, SURGERY                              |
| 10       | MOVE/POSITION PATIENT WITH SUSPECTED FRACTURES OF EXTREMITIES                          |
| 11       | MOVE/POSITION PATIENT WITH SUSPECTED SPINAL FRACTURES OR CORD<br>INJURIES              |
| 12       | MOVE/POSITION PATIENT WITH HEAD INJURIES   |
| 13       | MOVE/POSITION PATIENT WITH SUSPECTED INTERNAL INJURIES                                 |
| 14       | MOVE/POSITION COMATOSE/ANESTHETIZED PATIENT  |
| 15       | DRAPE/GOWN PATIENT FOR EXAMINATION/TREATMENT   |
| 16       | RESTRAIN/CONTROL CHILDREN FOR EXAMINATION/TREATMENT/TEST                               |
| 17       | RESTRAIN/CONTROL PATIENT VERBALLY  |
| 18       | RESTRAIN/CONTROL PATIENT PHYSICALLY, E.G. ARM HOLD                                     |
| 19       | ACCOMPANY PATIENT TO OTHER DEPARTMENTS/CLINICS   |
| 20       | TRANSPORT NON AMBULATORY PATIENT TO OTHER DEPARTMENTS/CLINICS                          |
| 21       | ASK PATIENT/CHECK CHART FOR CONTRAINDICATION FOR TREATMENT,<br>PROCEDURE, TEST         |
| 22       | ASCERTAIN IF PATIENT HAS BEEN PREPPED FOR TEST/TREATMENT<br>PROCEDURE                  |
| 23       | EXPLAIN X-RAY PROCEDURES TO PATIENT  |
| 24       | EXPLAIN SCAN PROCEDURES TO PATIENT   |
| 25       | EXPLAIN RADIATION THERAPY PROCEDURES TO PATIENT  |

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 07<br>OF RESPONSE BOOKLET        |
|----------|--|
| 26       | EXPLAIN RADIATION SAFETY MEASURES TO PATIENT ON RADIOTHERAPY                               |
| 27       | REASSURE/CALM APPREHENSIVE (ANXIOUS) PATIENT   |
| 28       | REASSURE APPREHENSIVE PARENTS OF PEDIATRIC PATIENT   |
| 29       | REASSURE/CALM CHILDREN FOR EXAMINATION OR TREATMENT  |
| 30       | GIVE ORAL DOSE OF RADIOPHARMACEUTICAL  |
| 31       | ADMINISTER ORAL MEDICATION   |
| 32       | ADMINISTER MEDICATION BY INTRAMUSCULAR INJECTION   |
| 33       | ADMINISTER INTRADERMAL INJECTION   |
| 34       | ADMINISTER MEDICATION BY SUBCUTANEOUS INJECTION  |
| 35       | ADMINISTER MEDICATION BY INJECTION INTO IV TUBING  |
| 36       | CALCULATE RATE OF I.V. FLOW, E.G. DROPS PER MINUTE   |
| 37       | ADD/CHANGE I.V. BOTTLE DURING CONTINUOUS INFUSION  |
| 38       | MONITOR/REGULATE INTRAVENOUS SOLUTION FLOW RATE  |
| 39       | TERMINATE INTRAVENOUS DYE FLOW AND REMOVE INJECTOR   |
| 40       | ADMINISTER I.V. DOSE OF RP   |
| 41       | ADMINISTER NARCOTICS   |
| 42       | OBSERVE/REPORT SYMPTOMS OF SIDE EFFECTS TO TREATMENT/MEDICATION                            |
| 43       | OBSERVE/RECORD PATIENT'S PHYSICAL/EMOTIONAL RESPONSE TO<br>TREATMENT/DIAGNOSTIC PROCEDURES |
| 44       | CHECK PATIENTS TEMPERATURE   |
| 45       | TAKE BLOOD PRESSURE  |
| 46       | CHECK RADIAL (WRIST) PULSE   |
| 47       | CHECK FEMORAL PULSE FOR PRESENCE AND QUALITY   |
| 48       | CHECK PEDAL PULSE FOR PRESENCE AND QUALITY   |
| 49       | DETERMINE APICAL PULSE RATE/RHYTHM WITH STETHESCOPE  |
| 50       | OBSERVE/REPORT SYMPTOMS OF SIDE EFFECTS TO TREATMENT/MEDICATION                            |

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 08 OF RESPONSE BOOKLET            |
|----------|--|
| 1        | TEST FOR ALLERGIC RESPONSE TO A SPECIFIC AGENT, E.G. DYE/DRUG                              |
| 2        | PLAN/MODIFY DIAGNOSTIC PROCEDURES ACCORDING TO PATIENT'S RESPONSE/NEED                     |
| 3        | APPLY/REMOVE SLING, E.G. ARM, LEG  |
| 4        | APPLY/REMOVE SPLINT  |
| 5        | GIVE EMERGENCY TREATMENT/FIRST AID FOR CARDIAC ARREST                                      |
| 6        | GIVE EMERGENCY TREATMENT/FIRST AID FOR RESPIRATORY IMPAIRMENT                              |
| 7        | GIVE EMERGENCY TREATMENT/FIRST AID FOR SEVERE DRUG REACTION                                |
| 8        | GIVE EMERGENCY TREATMENT/FIRST AID FOR SHOCK   |
| 9        | GIVE EMERGENCY TREATMENT/FIRST AID FOR HEAD INJURY   |
| 10       | GIVE EMERGENCY TREATMENT/FIRST AID FOR SPINAL CORD INJURY                                  |
| 11       | GIVE EMERGENCY TREATMENT/FIRST AID FOR EXTERNAL HEMORRAGE                                  |
| 12       | GIVE EXTERNAL CARDIAC MASSAGE  |
| 13       | GIVE OXYGEN THERAPY, I.E. CANNULA, CATHETER/MASK   |
| 14       | REVIEW DOCTOR'S ORDERS AND INSTRUCTIONS WITH DOCTOR  |
| 15       | OBTAIN CLARIFICATION OF CONFLICTING DOCTOR'S ORDERS  |
| 16       | MAKE SUGGESTION REGARDING NEED FOR DIAGNOSTIC TESTS  |
| 17       | INFORM WARD PERSONNEL OF PRECAUTIONS IN HANDLING PATIENT ON RI THERAPY                     |
| 18       | INFORM DOCTOR/NURSE OF PATIENT'S CONDITION, E.G. DESCRIPTION OF INJURY, SYMPTOMS, RESPONSE |
| 19       | WRITE STANDARD INSTRUCTIONS FOR PATIENT CONCERNING EXAMINATIONS/THERAPY OR PROCEDURES      |
| 20       | ARRANGE FOR SPECIAL OR LATE MEALS FOR PATIENTS/VISITOR/STAFF                               |
| 21       | SCHEDULE APPOINTMENTS FOR CLINIC/DEPARTMENT, E.G., MAINTAIN APPOINTMENT BOOK               |
| 22       | CONTACT OTHER DEPARTMENTS TO OBTAIN/COORDINATE PATIENT/PERSONNEL APPOINTMENTS              |
| 23       | LOCATE MISPLACED CHARTS/HEALTH RECORDS   |
| 24       | CHECK CONSULTATION REQUESTS TO INSURE THE CORRECT STUDY IS TO BE CARRIED OUT               |
| 25       | REVIEW AND FOLLOW THROUGH ON COMPLETED CONSULT REPORTS                                     |

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 08  
OF RESPONSE BOOKLET

- 26 INFORM DOCTOR OF ANY CONTRAINDICATIONS TO STUDY
- 27 ARRANGE FOR/FOLLOW UP COMPLETION OF CLINICAL LABORATORY TEST
- 28 MAINTAIN LOG OF RADIOISOTOPE STUDIES
- 29 MAINTAIN LOG OF RESULTS OF STERILITY AND PYROGEN TESTING
- 30 MAINTAIN LOG OF QUALITY CONTROL PROCEDURES
- 31 ASSIGN SCAN IDENTIFICATION NUMBER
- 32 CODE SCANS
- 33 COPY SCANS
- 34 FILE SCANS
- 35 CHECK SCANS OUT TO THE WARDS OR DOCTORS
- 36 SHIP OUT SCANS AND REPORTS TO OTHER MEDICAL ACTIVITIES
- 37 ASSEMBLE PATIENT RECORDS FOR REVIEW BY DOCTOR
- 38 PREPARE PATIENT RADIOPHARMACEUTICAL DOSE RECORD
- 39 PICK UP/DELIVER SPECIMENS
- 40 LABEL/ACCESSION SPECIMEN CONTAINERS, E.G. TUBES, SLIDES
- 41 LOG SPECIMENS RECEIVED
- 42 MEASURE/DILUTE/PRESERVE LAB SPECIMEN E.G. URINE, BLOOD FOR  
SUBSEQUENT TESTING
- 43 CONVERT CENTIGRADE TEMPERATURE TO FAHRENHEIT OR VICE VERSA
- 44 CALCULATE AND PREPARE PERCENT SOLUTIONS
- 45 CALCULATE AND PREPARE NORMAL/MOLAR SOLUTIONS
- 46 CALCULATE AND PREPARE MOLAL SOLUTIONS
- 47 CALCULATE MILLIEQUIVALENTS/MILLIMOLES
- 48 CALCULATE MOLAR/NORMAL CONCENTRATIONS OF REAGENTS FOR BUFFER  
PREPARATION
- 49 PREPARE BUFFER SOLUTIONS
- 50 WASH GLASSWARE/INSTRUMENTS

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 09<br>OF RESPONSE BOOKLET |
|----------|--|
| 1        | DEPYROGENATE GLASSWARE   |
| 2        | CALCULATE LAB/DIAGNOSTIC TEST RESULTS  |
| 3        | CHECK/CORRECT CALCULATIONS PERFORMED BY OTHER TECHNICIANS                          |
| 4        | COLLECT BLOOD BY VENIPUNCTURE  |
| 5        | COLLECT CAPILLARY BLOOD SAMPLE, I.E. FROM FINGER TIP, TOE OR EAR<br>LOBE           |
| 6        | COLLECT BLOOD BY ARTERIAL PUNCTURE   |
| 7        | CENTRIFUGE BLOOD AND SEPARATE SERUM OR PLASMA                                      |
| 8        | USE LOCALLY DEVELOPED MANUALS/GUIDES TO FOLLOW ANALYTICAL<br>PROCEDURES            |
| 9        | USE NAVY/ODD MANUALS TO STUDY ANALYTICAL PROCEDURES                                |
| 10       | USE COMMERCIAL MANUALS TO FOLLOW ANALYTICAL PROCEDURES                             |
| 11       | ASSESS ACCURACY OF ANALYSIS PERFORMED BY OTHER LABORATORIES                        |
| 12       | ASSESS COMPLETENESS OF LABORATORY REPORTS  |
| 13       | MAINTAIN LOG OF RADIOISOTOPE STUDIES   |
| 14       | MAINTAIN LOG OF RESULTS OF STERILITY AND PYROGEN TESTING                           |
| 15       | PLOT READING/VALUES ON SEMILOG PAPER   |
| 16       | CONSTRUCT CATHETERS FOR SPECIAL X-RAY EXAMINATIONS                                 |
| 17       | MONITOR EXPIRATION DATED PHARMACEUTICALS   |
| 18       | PREPARE AND MAINTAIN ANTIDOTE SECTION/LOCKER                                       |
| 19       | CHECK/COUNT NARCOTICS/CONTROLLED DRUGS   |
| 20       | SAFEGUARD POISONS  |
| 21       | PREPARE AND MAINTAIN X-RAY FILE ENVELOPES  |
| 22       | IDENTIFY RADIOGRAPH  |
| 23       | FILE RADIOGRAPHS   |
| 24       | MAINTAIN X-RAY FILM LIBRARY/FILE   |
| 25       | LOAN X-RAY FILMS TO DOCTORS/OTHER DEPARTMENTS                                      |

GO TO RIGHT HAND PAGE

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 09<br>OF RESPONSE BOOKLET        |
|----------|--|
| 26       | PREPARE X-RAY FILMS FOR MAILING  |
| 27       | PREPARE RADIOGRAPHS FOR VIEWING BY DOCTOR  |
| 28       | PREPARE X-RAY REPORTS FOR PHYSICIAN TO COMPLETE  |
| 29       | LOG STD 519-A RADIOGRAPHIC REPORT  |
| 30       | LOG NUMBER OF X-RAY EXPOSURES MADE ON EACH PATIENT   |
| 31       | MAINTAIN ROENTGEN DIAGNOSTIC INDEX   |
| 32       | MAINTAIN TECHNIQUE CHARTS  |
| 33       | ISSUE FLUOROSCOPIC EXAMINATION SCHEDULES   |
| 34       | MAINTAIN RADIATION EXPOSURE FILM FILES   |
| 35       | MAINTAIN FILES OF PERSONNEL WHO ARE INCIDENTALLY EXPOSED TO<br>RADIATION                   |
| 36       | PREPARE REQUESTS FOR PERSONNEL RADIATION EXPOSURE HISTORY                                  |
| 37       | LOG PERSONNEL EXPOSURES ON DD1141  |
| 38       | PREPARE INTERCOMMAND REPORTS OF PERSONNEL EXPOSURE - VISITORS<br>AND TRANSFERRED PERSONNEL |
| 39       | PREPARE EVALUATION REPORTS OF PERSONNEL RADIATION MONITORING<br>DEVICES                    |
| 40       | ISSUE PERSONNEL MONITORING DEVICES, E.G. POCKET DOSIMETER, FILM<br>BADGE                   |
| 41       | COLLECT PERSONNEL MONITORING DEVICES FOR PROCESSING  |
| 42       | MAINTAIN PHOTODOSIMETRY LOGS   |
| 43       | MAINTAIN FILES OF RECEIPT/TRANSFER OF RADIOACTIVE MATERIAL                                 |
| 44       | MAINTAIN RADIOACTIVE MATERIAL INVENTORY  |
| 45       | MAINTAIN RECORDS OF RADIOACTIVE WASTE TRANSFERS  |
| 46       | MAINTAIN FILES OF CALIBRATED RADIOACTIVE SOURCES   |
| 47       | MAINTAIN SEALED SOURCE INVENTORY AND LOCATION  |
| 48       | MAKE FORMAL REQUESTS FOR RADIATION SOURCE CHANGES  |
| 49       | MAINTAIN INVENTORIES OF RADIATION MONITORING EQUIPMENT RESERVED<br>FOR DISASTER CONTROL    |
| 50       | MAINTAIN LOCATIONS OF OPERATIONAL RADIATION MONITORING EQUIPMENT                           |

TURN PAGE

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 10  
OF RESPONSE BOOKLET

- 1 MAINTAIN RADIATION SURVEY FILES
- 2 PROCESS/DISSEMINATE NBC INFORMATION
- 3 DRAFT WARD/CLINIC ACCIDENT/INCIDENT REPORTS, I.E. WORK INJURY  
REPORTS FOR PATIENTS OR STAFF
- 4 PREPARE NAVMED 1432 A,B,C (PHOTODOSIMETRY/RADIATION)
- 5 MAINTAIN APPROVED USER FILE
- 6 PREPARE AEC LICENSE ADMENDENTS
- 7 REQUEST AEC LICENSE AMENDMENTS
- 8 PREPARE DRUG INVESTIGATION FORMS FOR FDA AND AEC
- 9 MAINTAIN AEC LICENSE FILES
- 10 SET UP/REVIEW BLOOD COUNT RECORD KEEPING ON RADIOLOGY PERSONNEL
- 11 PREPARE RADIOPHARMACEUTICAL CONTRACTS
- 12 ARRANGE FOR HOUSEKEEPING/CLEANLINESS OF AREA
- 13 DO HOUSEKEEPING/CLEANING DUTIES
- 14 CHECK EQUIPMENT FOR ELECTRICAL HAZARDS AND GROUNDS
- 15 DO PERIODIC MECHANICAL SAFETY CHECKS ON POWER OPERATED EQUIPMENT
- 16 ENFORCE ACCIDENT PREVENTION MEASURES
- 17 CALIBRATE SAFETY RECORDING INSTRUMENTS, E.G. DOSIMETERS
- 18 INSPECT FOR AVAILABILITY AND USE OF SAFETY EQUIPMENT IN  
HAZARDOUS AREAS
- 19 INSPECT FOR USE OF PROTECTIVE CLOTHING IN OCCUPATIONALLY  
HAZARDOUS AREAS
- 20 DISPOSE OF HAZARDOUS MATERIAL E.G. CULTURES/ ACIDS
- 21 ORDER PHOTODOSIMETRIC FILM
- 22 MAKE LOCAL (OPEN) PURCHASE OF SUPPLIES
- 23 EVALUATE NEW EQUIPMENT, I.E. USER TEST
- 24 READ EQUIPMENT MANUALS FOR OPERATION AND MAINTENANCE OF  
EQUIPMENT
- 25 RUN TEST STANDARD TO CHECK ACCURACY OF EQUIPMENT

GO TO RIGHT HAND PAGE

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 10  
OF RESPONSE BOOKLET

- 26 CALIBRATE EQUIPMENT
- 27 DO MINOR REPAIR ON EQUIPMENT
- 28 SUPERVISE ROUTINE EQUIPMENT MAINTENANCE FOR SECTION/UNIT
- 29 PREPARE SCHEDULE FOR CONTRACT PREVENTIVE MAINTENANCE
- 30 PREPARE PAPERWORK FOR EQUIPMENT REPAIR/MAINTENANCE
- 31 ARRANGE FOR REPLACEMENT/REPAIR OF EQUIPMENT AS REQUIRED
- 32 COORDINATE WITH MANUFACTURERS/CONTRACTORS FOR EQUIPMENT REPAIR/MAINTENANCE
- 33 MAINTAIN INVENTORY/STOCK OF EQUIPMENT/FURNITURE
- 34 SURVEY EQUIPMENT TO DETERMINE CONTINUED SERVICEABILITY/USABILITY
- 35 EVALUATE THE MAINTENANCE AND USE OF SUPPLIES, EQUIPMENT AND WORK SPACE
- 36 DETERMINE SUPPLIES AND EQUIPMENT BUDGET
- 37 CONFER/VISIT MANUFACTURERS/CONTRACTORS TO OBTAIN FIRST HAND KNOWLEDGE OF EQUIPMENT/SUPPLIES
- 38 ORDER SUPPLIES/EQUIPMENT THROUGH FEDERAL SUPPLY SYSTEM
- 39 SUPERVISE/DIRECT UNITS'S OJT PROGRAM
- 40 PLAN CONTENT FOR OJT PROGRAM
- 41 SCHEDULE LECTURES
- 42 DESIGN TRAINING AIDS, ILLUSTRATIONS, GRAPHICS
- 43 SELECT CLINICAL MATERIAL FOR INSTRUCTIONAL PURPOSES, E.G. PATIENTS, CASE STUDIES
- 44 EVALUATE/SELECT AUDIOVISUAL MATERIALS, E.G. FILMS
- 45 CONDUCT SEMINARS
- 46 PLAN CONFERENCES FOR STUDENTS DURING PRACTICAL TRAINING
- 47 TEACH FORMAL CLASSES
- 48 ADMINISTER EXAMINATIONS
- 49 COMPUTE TEST GRADES
- 50 DEMONSTRATE CLINICAL PROCEDURES USING PATIENT/SUBJECT

TURN PAGE

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 11 OF RESPONSE BOOKLET |
|----------|---|
|----------|---|

- |    |  |
|----|--|
| 1  | SELECT WORK EXPERIENCES FOR STUDENT/TRAINEE  |
| 2  | EVALUATE STUDENTS PERFORMANCE/PROGRESS   |
| 3  | COORDINATE WITH SUPERVISORS/INSTRUCTORS ON STUDENT TRAINING                          |
| 4  | DESIGN SPECIAL RESEARCH EQUIPMENT/DEVICES  |
| 5  | BUILD SPECIAL EQUIPMENT/DEVICES FOR RESEARCH   |
| 6  | CALCULATE DOSAGES FOR PRESCRIBED EXPERIMENTS   |
| 7  | RECORD/MAINTAIN RECORDS OF EXPERIMENTAL FINDINGS/TESTS                               |
| 8  | CONDUCT RESEARCH LITERATURE SEARCH/SURVEY  |
| 9  | CALCULATE MEANS, STANDARD DEVIATIONS   |
| 10 | PERFORM CALCULATIONS FOR ANALYSIS OF VARIANCE, CORRELATIONS, OR RELIABILITY MEASURES |
| 11 | MAINTAIN ANIMAL COLONY   |
| 12 | ACT AS OBSERVER OF EXPERIMENTAL SUBJECTS/ANIMALS                                     |
| 13 | OPERATE/CONTROL EQUIPMENT FOR EXPERIMENTAL TESTS                                     |
| 14 | CALIBRATE/TEST EXPERIMENTAL EQUIPMENT/APPARATUS                                      |
| 15 | WRITE RESEARCH PROGRESS REPORTS  |
| 16 | SELECT EXPERIMENTAL SUBJECTS/ANIMALS   |
| 17 | WRITE TECHNICAL PAPERS/REPORTS FOR PUBLICATION                                       |

**Part II B**

**LIST OF INSTRUMENTS AND EQUIPMENT**

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 12  
OF RESPONSE BOOKLET

- 1 TRAY, ANAESTHETIC, LOCAL
- 2 TRAY, ANAESTHETIC PENTOTHAL
- 3 TRAY, ANAESTHETIC PREPARATION
- 4 TRAY, ANAESTHETIC SPINAL
- 5 TRAY, ANAESTHETIC REGIONAL
- 6 CARDIAC ARREST TRAY/CART
- 7 TRAY, X-RAY ARTHROGRAM
- 8 TRAY, X-RAY BRONCHOGRAM
- 9 TRAY, X-RAY CHOLANGIOGRAM
- 10 TRAY, X-RAY DISCOGRAM
- 11 TRAY, X-RAY I. V. PYELOGRAMS
- 12 TRAY, X-RAY MYELOGRAM
- 13 TRAY, X-RAY SIALOGRAM
- 14 TRAY, CARDIAC ANGIOGRAM
- 15 TRAY, CARDIAC AORTOGRAM
- 16 TRAY, PNEUMOENCEPHALOGRAM
- 17 TRAY, ARTERIOGRAM
- 18 HYSTEROSALPINGOGRAM TRAY
- 19 TRAY, LUMBAR PUNCTURE
- 20 OXYGEN CATHETERS
- 21 OXYGEN CYLINDER/TANK, PORTABLE
- 22 OXYGEN MASK
- 23 RESPIRATOR, BENNETT
- 24 RESPIRATOR BIRD
- 25 CLINICAL WEIGHT AND HEIGHT SCALES

GO TO RIGHT HAND PAGE

1 TASK NO. 1 ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 12  
1 OF RESPONSE BOOKLET

- |    |   |
|----|---|
| 26 | STETHOSCOPE                                 |
| 27 | SPHYGMOMANOMETER (BLOOD PRESSURE APPARATUS) |
| 28 | VACUTAINER BLOOD COLLECTING SYSTEM          |
| 29 | SYRINGE/NEEDLES                             |
| 30 | THERMOMETER, CLINICAL                       |
| 31 | PORTABLE X-RAY UNIT                         |
| 32 | STATIONARY X-RAY UNIT                       |
| 33 | ELECTRO-CONVULSIVE X-RAY EQUIPMENT          |
| 34 | X-RAY POSITIONER, HEAD                      |
| 35 | X-RAY, POLAROID UNIT                        |
| 36 | X-RAY, CONTROL CONSOLE                      |
| 37 | X-RAY, EQUIPMENT POWER UNIT                 |
| 38 | X-RAY TRANSFORMER                           |
| 39 | CALIPER                                     |
| 40 | X-RAY FILM VIEWER, STEREOSCOPE              |
| 41 | TILT TABLE                                  |
| 42 | PNEUMOENCEPHLOGRAM CHAIR                    |
| 43 | LYSHOLM/WAFER GRID                          |
| 44 | AUTOMATIC INJECTOR, X-RAY CONTRAST MATERIAL |
| 45 | RADIATION THERAPY EQUIPMENT                 |
| 46 | COBALT THERAPY MACHINES                     |
| 47 | CAMERA, PHOTOFLUOROGRAPHIC                  |
| 48 | X-RAY/PHOTOFLUOROGRAPHIC ROLL FILM VIEWER   |
| 49 | ILLUMINATOR, X-RAY FILM                     |
| 50 | AUTOMATIC FILM CHANGER, E.G. SANCHEZ-PAREZ  |

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| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 13 OF RESPONSE BOOKLET |
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| 1  | X-RAY CASSETTE CHANGER                    |
| 2  | RAPID FILM (ROLL) CHANGER                 |
| 3  | X-RAY FILM VIEWER, STEREOSCOPE            |
| 4  | X-RAY, FILM IDENTIFICATION PRINTER        |
| 5  | X-RAY, FILM LIGHT PROOF STORAGE CABINET   |
| 6  | IMAGE INTENSIFIER, FLUOROSCOPIC UNITS     |
| 7  | FLUORO DEMONSTRATOR                       |
| 8  | OSCILLOSCOPE                              |
| 9  | PROCESSING MACHINE, X-RAY FILM, AUTOMATIC |
| 10 | X-RAY DEVELOPER, MANUAL, DRY PROCESS      |
| 11 | PROCESSING MACHINE, X-RAY FILM, MANUAL    |
| 12 | DEVELOPER PRINTER                         |
| 13 | DRYER, X-RAY FILM                         |
| 14 | ANTI-C COVERALLS                          |
| 15 | ANTI-C HOOD                               |
| 16 | FACE SHIELD, RADIATION                    |
| 17 | AIR FILTER RESPIRATOR                     |
| 18 | GLOVES, COTTON                            |
| 19 | GLOVES, RUBBER                            |
| 20 | SHOE COVERS                               |
| 21 | WATERPROOF ANTI-C CLOTHING                |
| 22 | GOGGLES, RADIATION PROTECTIVE             |
| 23 | POCKET DOSIMETER                          |
| 24 | POCKET DOSIMETER CHARGER                  |
| 25 | DT-60                                     |

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TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 13  
| OF RESPONSE BOOKLET

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| 26 | DT 60 READER, E.G. CP-95   |
| 27 | FILM BADGE   |
| 28 | DENSITOMETER, E.G. MCBETH GN-304   |
| 29 | THERMOLUMINESCENT DOSIMETER  |
| 30 | THERMOLUMINESCENT DOSIMETER READER   |
| 31 | HD-251/UD AIR SAMPLER, E.G. CADILLAC   |
| 32 | PORTAVAC AIR SAMPLER   |
| 33 | IC/T2-FD AIR SAMPLER   |
| 34 | T-289 AIR SAMPLER  |
| 35 | CONSTANT AIR MONITOR (CAM)   |
| 36 | AIR PARTICLE DETECTOR (APO)  |
| 37 | IC-T2-PA AIR SAMPLER   |
| 38 | ALPHA SURVEY INSTRUMENTS, PORTABLE   |
| 39 | FAST NEUTRON SURVEY INSTRUMENTS, PORTABLE  |
| 40 | THERMAL NEUTRON SURVEY INSTRUMENTS, PORTABLE                                     |
| 41 | PORTABLE BETA, GAMMA SURVEY INSTRUMENTS, RADIATION LEVELS UNDER 500 MR PER HOUR  |
| 42 | PORTABLE BETA, GAMMA SURVEY INSTRUMENTS, RADIATION LEVELS UNDER 5000 MR PER HOUR |
| 43 | PORTABLE BETA, GAMMA SURVEY INSTRUMENTS, RADIATION LEVELS OVER 5000 MR PER HOUR  |
| 44 | PORTABLE NON-INDICATING ION CHAMBER, E.G. R CHAMBER                              |
| 45 | NON INDICATING ION CHAMBER READER, E.G. CONDENSER, R-METER                       |
| 46 | QUARTZ-FIBER ELECTROSCOPE  |
| 47 | DOSE CALIBRATOR  |
| 48 | G-M COUNTER AND SCALER   |
| 49 | PROPORTIONAL COUNTER AND SCALES  |
| 50 | CRYSTAL SCINTILLATION COUNTER, SINGLE CHANNEL ANALYZER                           |

TASK NO. ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 14  
OF RESPONSE BOOKLET

- 1 CRYSTAL SCINTILLATION COUNTER, MULTI CHANNEL ANALYZER
- 2 SCINTILLATION SYSTEM FOR EXTERNAL ORGAN COUNTING
- 3 WHOLE BODY RADIATION COUNTER
- 4 LIQUID SCINTILLATION COUNTER
- 5 GAS FLOW COUNTING SYSTEM
- 6 SCANNER, PAPER DOT RECORDER
- 7 SCANNER, PHOTO RECORDER
- 8 WHOLE BODY SCANNER
- 9 RENOGAM SYSTEM, DUAL PROBE
- 10 RENOGAM SYSTEM, TRI PROBE
- 11 RENOGAM SYSTEM WITH MAGNETIC TAPE
- 12 GAMMA CAMERA BASIC UNIT WITH ALL COLLIMATORS
- 13 GAMMA CAMERA ACCESSORY, RENOGAM SYSTEM
- 14 GAMMA CAMERA ACCESSORY, POLAROID CAMERA AND ENLARGING SYSTEM
- 15 GAMMA CAMERA ACCESSORY, DYNAMIC FLOW, 8MM CAMERA
- 16 GAMMA CAMERA ACCESSORY, OSCILLOSCOPE
- 17 GAMMA CAMERA ACCESSORY, DYNAMIC FLOW 35MM CAMERA
- 18 GAMMA CAMERA ACCESSORY, VIDEO TAPE RECORDING SYSTEM
- 19 GAMMA CAMERA ACCESSORY, MULTI-DIMENSIONAL ANALYSIS SYSTEM
- 20 AUTO-ANALYZER, SINGLE OR DUAL CHANNEL
- 21 SEQUENTIAL MULTIPLE ANALYZER 4 CHANNEL
- 22 SEQUENTIAL MULTIPLE ANALYZER 12 CHANNEL
- 23 AUTOMATIC SAMPLE CHANGER
- 24 DRUM KYMOGRAPH
- 25 XY PLOTTER

| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 14 OF RESPONSE BOOKLET |
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| 26       | STRIP CHART RECORDER   |
| 27       | THIN LAYER CHROMATOGRAPHY APPARATUS  |
| 28       | PAPER CHROMATOGRAPHY APPARATUS   |
| 29       | 99M-TC GENERATOR   |
| 30       | 113M-IN GENERATOR  |
| 31       | MICROSCOPE WITH NEUBAUER COUNTING CHAMBER  |
| 32       | RADIUM THERAPY, APPLICATORS  |
| 33       | RADIUM IMPLANTS, PHARYNX   |
| 34       | RADIUM IMPLANTS, VAGINA  |
| 35       | THERMOMETER LABORATORY   |
| 36       | AUTOMATIC PIPETTING MACHINE  |
| 37       | MICROPIPETTE   |
| 38       | PIPET  |
| 39       | PIPET FILLER (RUBBER BULB)   |
| 40       | VOLUMETRIC GLASSWARE (OTHER THAN BURETS AND PIPETS)                              |
| 41       | GLASS WASHER/DRYER   |
| 42       | AUTOCLAVE, DRY HEAT  |
| 43       | AUTOCLAVE, GAS   |
| 44       | AUTOCLAVE, STEAM   |
| 45       | ULTRASONIC CLEANER   |
| 46       | NEEDLE WASHER  |
| 47       | WATER DEMINERALIZER  |
| 48       | DISTILLING APPARATUS, WATER  |
| 49       | MICROFILTRATION SYSTEM   |
| 50       | BURET, MICRO   |

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| TASK NO. | ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 15 OF RESPONSE BOOKLET |
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| 1  | BURETTE, MACRO                                     |
| 2  | AUTOMATIC BURETTES                                 |
| 3  | PHOTOMETRIC TITRATOR                               |
| 4  | PH METER   |
| 5  | FLASK SHAKER                                       |
| 6  | TUBE AGITATOR/MIXER/SHAKER                         |
| 7  | HOMOGENIZER/BLENDER                                |
| 8  | CENTRIFUGE, CLINICAL (TABLE MODEL)                 |
| 9  | CENTRIFUGE, LABORATORY (FLOOR MODEL)               |
| 10 | CENTRIFUGE, REFRIGERATED                           |
| 11 | HEMATOCRIT READER                                  |
| 12 | MICRO HEMATOCRIT CENTRIFUGE AND READER             |
| 13 | WATER BATH WITH THERMOSTAT                         |
| 14 | DIRECT READ-OUT BALANCE, E.G. METTLER              |
| 15 | ANALYTICAL BALANCE                                 |
| 16 | TRIP BALANCE                                       |
| 17 | AIR COMPRESSOR                                     |
| 18 | SUCTION/VACUUM PUMP                                |
| 19 | SUCTION FUNNEL                                     |
| 20 | LIGHT, ULTRAVIOLET, SPECIMEN EXAMINING             |
| 21 | GAS BURNERS, E.G. BUNSEN                           |
| 22 | COMPRESSED GAS TANKS/CYLINDERS (OTHER THAN OXYGEN) |
| 23 | OXYGEN CYLINDER/TANK, PORTABLE                     |
| 24 | CHEMICAL FUME HOOD                                 |
| 25 | FIRE EXTINGUISHER                                  |

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| 26 | NUMBERING MACHINE           |
| 27 | SLIDE RULE                  |
| 28 | ELECTRIC DESK CALCULATOR    |
| 29 | TYPEWRITER                  |
| 30 | MOVIE PROJECTOR/ACCESSORIES |
| 31 | CLOSE CIRCUIT TV SYSTEM     |

END OF TASK BOOKLET